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Order GOBIOIDEA

The Gobiod Fishes

Body variously oblong to elongate and extended. Head variable, usually prominent and obtuse. Eyes moderate or small, sometimes concealed, continuous with skin of head. Dentition variable, often small or moderate teeth present, sometimes enlarged canines. Premaxillaries protractile. Opercle unarmed. Preopercle usually unarmed, sometimes with short spine. Suborbital without bony stay. Gill membranes mostly united with isthmus, with gill openings largely lateral. Gills 4, slit behind fourth. Pseudobranchiae present or absent. No pyloric appendages. Vertebrae 25 to 34. Body covered with ctenoid or cycloid scales, sometimes scaleless. No lateral line. Dorsals separate or united; spinous fin, when present, of 2 to 8 flexible spines. Anal like soft dorsal, with small weak spine or none. Caudal convex. Ventrals thoracic or subjugular, each with weak spine and 4 or 5 short rays.

A large group of small carnivorous shore fishes, many estuarine and the majority marine. Gobies live in all seas of the globe except those of the frigid zones, and are represented in many fresh waters. The

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largest forms reach a meter and others are among the smallest of all fishes. Though formerly but several families have been admitted recent authors have used as many as eight.

## Analysis of Families

a. Two distinctly separated dorsal fins.

b. Ventrals widely separated; lateral line distinct, complete. Rhyacichthyidae

b. Ventrals not widely separated.

c. Eyes not on stalks; Pectoral base not very muscular.

d. Ventrals close together, not united. Eleotridae

dd. Ventrals united to form a disk (connecting membrane rarely partly incised or only basal). Gobidae

c. Eyes very prominent and closely placed, on short stalks; pectoral base very muscular. Periophthalimidae

a. Dorsals united more or less as single fin; ventrals united. Gobioididae

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Family RHYACICHTHYIDAE

Body partly cylindrical anteriorly, laterally compressed posteriorly, with caudal peduncle moderately long. Head rather short, broadly expanded, and with wide set paired fins lower surfaces flattened, functioning to hold fish like a disk to rocks or other firm objects. Snout long. Eyes high, face upward. Mouth small, inferior. Teeth small. Gill openings moderate. No air bladder. Scales moderate or large, ctenoid. Head largely scaleless. Fins scaleless, except caudal base. Two distinct dorsals, well separated. Caudal moderate or large. Pectorals large, wide set, ventrals smaller and closer.

A small group of aberrant gobies, apparently comprising a single genus "which so closely resembles in its adaptive features Chimarrichthys, Homaloptera and Exostoma, belongs to the Gobiidae", according to Boulenger.

Koumans gives the family name as Rhiachthyidae.

Prelim. Rev. Genera Gobiod Fishes, p. 14, 1931.

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Genus RHYACICHTHYS Boulenger

Rhyacichthys BOULENGER, Ann. Mag. Nat. Hist., London, ser. 7, vol. 8,  
p. 267, 1901. (Type Platyptera melanocephala (KUHL and VAN HASSELT) CUVIER =  
Platyptera aspro (KUHL and VAN HASSELT) VALENCIENNES, virtual monotype.  
Rhyacichthys BOULENGER proposed to replace Platyptera (KUHL and VAN  
HASSELT) CUVIER.)

Platyptera (not MEIGEN 1803) (KUHL and VAN HASSELT) CUVIER, Regne  
Animal, vol. 2, ed. 2, p. 248, 1829. (Type Platyptera melanocephala  
(KUHL and VAN HASSELT) CUVIER, designated by JORDAN and EVERMANN, Genera  
of Fishes, pt. 1, 1917, p. 130.)

Platypterus SWAINSON, Nat. Hist. Animals, vol. 2, p. 183, 1839. (Type  
Platyptera melanocephala (KUHL and VAN HASSELT) CUVIER. Platypterus  
SWAINSON proposed to replace Platyptera (KUHL and VAN HASSELT) CUVIER.)

Body rather elongate. Head moderate, depressed, wide as long. Snout nearly twice wide as long, depressed. Eyes small, at front of posterior half of head. Mouth small, gape short, wide, upper jaw protractile. Teeth very small in jaws, none on palate. Preopercle unarmed. Gills 4. Pseudobranchiae moderate. Branchiostegals 6. Head with small scales on opercle and occiput. Body scales in rather even longitudinal series. First dorsal with 7 flexible spines. Second dorsal well separated from first, with short spine and 8 rays. Anal opposite second dorsal and similar. Caudal little emarginate behind. Pectoral largest of fins, rounded. Ventral moderate.

Apparently a single species living in mountain streams in the East Indian region and the Solomon Islands.

Rhyacichthys aspro (Valenciennes)

Platyptera aspro (Kuhl and Van Hasselt) VALENCIENNES, Hist. Nat.

Poiss., vol. 12, p. (240) 321, pl. 360, 1837 (type locality, Fresh waters of Bantam). - BLEEKER, Nat. Tyds. Ned. Indie, vol. 9, p. 284 (Suwangan, Celebes); Act. Soc. Sci. Ind. Neerl., No. 9, vol. 3, p. 2, 1857-58 (Padang; Sumatra), p. 9 (Trussan); vol. 5, No. 8, p. 1, 1858-59 (Klabatdiatas, Celebes); (Acht. Sumatra) vol. 8, p. 40, Feb. Aug. 1859 (reference); Nat. Tyds. Ned. Indie, vol. 22, p. 240, 1860 (Bali). - GUNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 138, 1861 (Wanderer Bay, Solomons). - PETERS, Monatsb. Akad. Wiss. Berlin, p. 268, 1868 (Loquilocon, Samar; Burauen River, Leyte). - GUNTHER, Journ. Mus. Godeffroy, vol. 6, pt. 11, p. 191, 1877 (above specimen). - KÁROLI, Termesz. Fuzetek, Budapest, vol. 5, p. 168, 1881 (1882) (Java). - MEYER, Ann. Soc. Espan. Hist. Nat. Madrid, vol. 14, p. 7 (Luzon), p. 31 ("Bahia de Manila"), 1885.

Rhyacichthys aspro WEBER, Nova Guinea, vol. 9, pt. 4, p. 599, 1913 (Begowre River at Salzquelle, North New Guinea). - HERRE, Gobies of Philippines, p. 22, pl. 1, fig. 1, 1927 (Angro River; Bugasong; Mamator River; San Jose; Bangui: barrio Cajulogan; Malaybalay). - FOWLER, Mem. Bishop

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Mus., vol. 10, p. 388, 1928 (compiled). - HERRE, Fish. Herre Philippine  
1931  
Exped., p. 80, 1934 (creek near Zamboanga). - ROXAS and MARTIN, Dep. Agric.  
Comm. Manila, Tech. Bull. 6, p. 219, 1937 (reference).

Platyptera melanocephala (Kuhl and Van Hasselt) CUVIER, Regne Animal,  
ed. 2, vol. 2, p. 248, 1829 (type locality, Indies) (no description or figure).

Platyptera trigonocephala (Kuhl and Van Hasselt) CUVIER, op. cit., p.  
248, 1829 (type locality, Indies) (no description or figure).

Platypterus flavesiensis Valenciennes, Regne Animal Cuvier, ed. ill.,  
pl. 83, fig. 1, 1839 (type locality, "Des eaux douces de Bentam à Java").

Platyptera sinensis BLEEKER, Ned. Tyds. Dierk., vol. 4, p. (116) 152,  
1873 (1874) (type locality, China). - HERRE, Gobies of Philippines, p. 22,  
1927 (reference).

Rhyacichthys sinensis CHU, Biol. Bull. St. John's Univ., No. 1, p.  
157, Jan. 1931 (reference).

Rhyacichthys novae-guineae Boulenger, Proc. Zool. Soc. London, pt. 1,  
p. 124, pl. 11, 1903 (type locality, Dinawa, Owen Stanley Range at 4000  
feet, British New Guinea).

Depth  $4\frac{2}{3}$  to  $5\frac{3}{4}$ ; head equals or slightly exceeds depth, length equals its width. Snout 2 in head, as seen above forms an equilateral triangle; eye  $3\frac{2}{3}$  to 3,  $2\frac{1}{5}$  to  $2\frac{2}{5}$  in snout, 1 to  $1\frac{1}{5}$  in interorbital; maxillary would reach half way to eye, length 3 in head; mouth width 2; interorbital flat; nostrils well separated, front one near middle in snout length.

Tubular scales 35 or 36 in lateral line, which begins behind eye, passes back in loop over pectoral, then descends below first dorsal to lower fourth in [body depth] height [shown but little below middle in body depth in figure] and between two dorsals makes downward loop and under beginning of second dorsal rises to center of side and continues on to caudal; 11 scales transversely [at second dorsal origin 5 below to lateral line and at anal origin 4 above to lateral line on figure], few small postocular scales; small opercle partially scaled, those on upper half very small; upper  $2\frac{2}{3}$  of muscular pectoral base covered with small scales; upper half of pectoral covered for  $3/8$  its length with small conspicuous scales; basal half of caudal with small scales.

Dorsal VII — I, 8, second spine  $1\frac{2}{5}$  in head, first ray  $1\frac{1}{4}$ ; Anal I, 8, third ray  $1\frac{1}{8}$ ; least depth of caudal peduncle  $1\frac{7}{8}$ ; ventral, interventral space  $2\frac{1}{2}$  in fin length; caudal 3 in rest of fish; pectoral 3, rays 1, 19, 1.

Color in alcohol brown to yellowish, darkest on top of head. First dorsal with black band near base and another near margin above which free tips of spines project. Caudal marked by transverse bars and blotches of brown.

Length 104 to 106 mm. (Herre.)

East Indies, Philippines, Solomona. I have no materials. Herre's largest specimen was 147 mm. long. He says of the species "It lives in swift mountain streams, clinging to the rocks and slipping around and under them when disturbed, and is very difficult to dislodge or collect. It seems to congregate particularly on large boulders which give it absolutely safe hiding places".

I agree with Herre that the imperfect account by Bleeker for Platyptera sinensis, based on a Chinese "Figura dubiae exactitudinis" and its incomplete details "are scarcely sufficient to separate it from Rhyacichthys aspro".

They are as follows:

Depth 4 in length. Scales 32? in lateral series. Body greenish above. Snout violaceous. Fins, except dusky spinous dorsal, with golden rays variegated with brown spots.